



**UNITED STATES AIR FORCE  
ARMSTRONG LABORATORY**

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**A HUMAN FACTORS GUIDE FOR  
CONSULTANTS TO USAF AIRCRAFT  
MISHAP INVESTIGATIONS**

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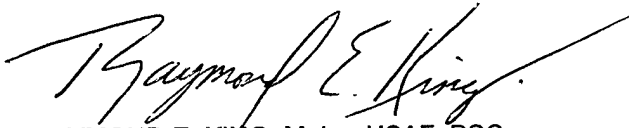
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This special report has been reviewed and is approved for publication.



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## **DEDICATION**

This Special Report is gratefully dedicated to Major Joyce A. Adkins, who has done much to promote the value of the skills of psychologists in the prevention and investigation of aircraft mishaps.

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## Preface

This document was initially prepared to be used as a handout for students of the Aircraft Mishap Investigation and Prevention (AMIP) course, United States Air Force School of Aerospace Medicine, Brooks Air Force Base, TX. The AMIP course is designed to train psychologists, aerospace physiologists, and flight surgeons to participate in safety investigation boards (SIBs). When an aircraft crash or other misadventure is investigated to prevent recurrence, rather than to assign accountability or responsibility, it is termed a "mishap." If a cause can be identified, then steps toward future prevention of a similar situation can be taken. The Air Force promptly, but carefully, investigates and catalogs all incidents that cause damage to flying assets or injury to persons. The most serious are termed Class A mishap, they involve a fatality or loss of an aircraft or damage of at least one million dollars, and they always result in the convening of a SIB. The SIB is typically assembled from individuals from within the mishap major command (MAJCOM), but from a base differing from the mishap crew and aircraft, who meet at the Air Force base closest to the mishap site. Less serious mishaps also receive scrutiny, but perhaps on a more local level.

To ensure maximum cooperation, privilege, or the ability to give anonymous testimony, is granted to witnesses so that problems or other concerns may be reported without fear of career loss or legal repercussions. A SIB differs from an Accident Investigation Board, which is conducted for administrative purposes - assigning accountability or responsibility. Information gleaned by the Accident Investigation Board can be used for legal purposes; witnesses are sworn and are not granted privilege. Most information gleaned during the SIB cannot be used by the Accident Investigation Board. While the MAJCOM owning the mishap aircraft conducts the investigation, the Air Force Safety Center, headquartered at Kirtland Air Force Base NM, provides guidance and consultation. Often a human factors consultant, perhaps from outside the mishap MAJCOM, must be quickly identified and put to work to determine why a mishap occurred and how to avoid a future similar event.

The final product of the SIB's labor is a 15,000 to 20,000 word document, compiled by an ad hoc team during an average thirty days of intensive work, that is then briefed to the convening authority (typically a four-star general). The Chief of Staff of the Air Force and the Secretary of the Air Force may also be briefed. The report details what happened, how it happened, and why it happened, with recommendations to avoid recurrence. The research and development community may become involved with the remedy of design, procedural, and training deficiencies. While the entire report is not releasable, information may be "sanitized" (removing identifying and incriminating information) and briefed to aviators and other personnel in the aviation community to provide lessons learned to avoid recurrence, proving that those who learn from history are not condemned to repeat it!

We hope you find this guide useful in preparing to consult to SIBs, but please appreciate that this guide is not a directive nor policy-making document.

We are indebted to Col Kent Magnusson, Col Harry E. Marden, Lt Col Jay Johnson, Lt Col Kent McLean, Lt Col Kevin West, Maj Joyce A. Adkins, Canadian Air Force Maj Jean-Guy Beaumont, and Mrs. Judy Bryant for their thoughtful critique of earlier versions of this guide. The authors also wish to acknowledge the hard work that Maj Steven C. Caberto and Capt Tamara N. Lombard have devoted to the success of the AMIP course.

# **A GUIDE FOR HUMAN FACTORS CONSULTANTS TO USAF SAFETY INVESTIGATION BOARDS**

## **Notification**

The request for a human factors consultant typically comes from the flight surgeon assigned to the board; officially, the request is made by the mishap investigation board president. Board presidents can ask for anything ranging from one well-defined question to a request that a consultant become a quasi-member of the board. This situation may result in a 30-day TDY for the consultant, although 7 to 10 days is typical. If a request for your expertise comes to you from the board, be sure it has been coordinated with the Air Force Safety Center. Remember, however, that the convening authority is the MAJCOM of the mishap aircraft.

Mishap investigation boards work under considerable time pressure. Recall they typically have 30 days to complete the entire process. Human factors consultants typically join the board 5-7 days after its formation which will be 7-9 days after the actual mishap. The sooner you can get there, the better! The board will want you to have arrived yesterday, but 24 hours is a good rule of thumb.

Make arrangements before you get the call. Obtain pre-approval from your commander. By regulation, local funds are used to support mishap investigation board consultants (see Funding below). In other words, your commander has to agree to let you go and pay for it. When you talk with someone from the board, ask about the scope of the request, the area of concern, and determine where they are in the investigative process. This information will help you determine the length of the TDY; stay flexible, however, as once you become associated with the SIB, the board president owns you until he/she releases you. You may not leave until the board president says so: "When technical specialists support an Safety Investigation Board, they are under the control and authority of the Safety Investigation Board president or investigating officer" (AFI 91-204, 3.9.2).

## **Orders**

Have your orders cut for 30 days and make sure the block "Variations Authorized" is checked (that will allow you to travel with the board, as necessary). "Dual billeting" should also be authorized on your orders. "Total billeting reimbursement authorized even if above government per diem limits" is another useful statement. Ask someone on the board if you'll need a rental car. Cars from the motor pool are frequently made available. Ask the board recorder to make billeting arrangements for you. They will try to put you with the other board members.

## **Funding**

"Each command funds TDY travel of its assigned personnel who are Air Force Safety Investigation Board members or technical experts" (AFI 91-204, 3.3.2). Units may "request an operating budget authority adjustment if investigation costs cannot be financed through reprogramming within the



operating budget authority" (AFI 91-204, 3.3.4). In sum: "Funding and travel arrangements are the responsibility of responding specialists or agencies" (AFI 91-204, 3.9.1.1).

## **Crash Kit**

You won't have much time after the initial notification, so be prepared. A list of suggested items can be found in Appendix A. A flight suit is the most appropriate uniform, but bring BDU's if you don't have flight suits. Leave your blues at home, you won't need them unless you attend the MAJCOM (convening authority) briefing. Bring other clothing as you deem appropriate, but remember seasons, and sometimes locations, change during the course of board proceedings. Bring a notebook computer if you can. You'll appreciate the flexibility it offers you. Computers will be available, but they are usually located in the board room which is noisy and when it's time to write, they will be in short supply. Bring as many reference materials as you are willing to carry. (See Appendix B for some suggestions.) It's a good idea to learn the scope of the board's request to determine which references will be most helpful. A phone call to an experienced consultant before you go is also very helpful. Start compiling a list of phone numbers to call when you need some help and remember to keep it current (See Appendix C).

## **On Arrival**

When you arrive at the base, contact the board via the person who requested you, probably the flight surgeon; if you're not renting a car, the flight surgeon may be willing to pick you up at the airport and you can use the time alone to begin your assessment of the situation: personalities, events, mishap process and details. Have the flight surgeon introduce you to the other members of the board. Be prepared to work. SIBs typically work 12-hour days, with no days off. By the time you get there, the board is fatigued by the amount and pace of work behind them and frustrated by the vast amount of work yet to be accomplished. You'll be fresh and a new source of energy, especially for the flight surgeon. PACE YOURSELF, you'll be joining the fatigued fray soon enough.

## **Human Factors Consultant Role**

You may need to clarify your role as a consultant to the board and educate them as to your skills, and possibly your limitations. You may be asked to be a free-lance mind reader or practice other psychic feats, and you may need to dazzle them with your ability to interview, analyze, write, and do simple statistics. Be flexible as boards have various, and sometimes changing, needs for the services of a human factors consultant depending on the personalities of the board members, the dynamics of the group, the extent of human factors involved in the mishap, and the interests and abilities of the flight surgeon member.

It's important to be an excellent consultant, but it's at least equally important to be an outstanding officer. Pay strict attention to military customs and courtesies. Be on time for all board meetings,

and arrange with the board president, in advance, if you will be late for, or absent from, a board meeting.

## **Data Collection**

Show up ready to work, but beware! You may be tempted to start offering your expertise immediately. Don't! You'll have that opportunity later. Gather information. Ask questions. The aircrew members of the board do not expect you to know everything about aviation. That is not why they invited you; they know about that part of the mishap. You're there to add your specialized knowledge.

## **Interviews**

Often effective interviewing is a critical need of the board and witness information may have already been contaminated; be aware that surviving crew members may never have been given the opportunity to "tell their story" and that your encouragement to do so without interruption may lead to valuable new information as well as having therapeutic benefit. Interviews should be carefully planned. Identify what information needs to be collected, who needs to be interviewed, what questions need to be asked, who should conduct the interview and who should attend the interview. Board members may not realize your expertise in conducting effective interviews; show them your stuff. Help board members prepare their interviews (see Appendix D) and give a crash course in how to interview effectively (see Appendix E). Emphasize rapport building, open-ended questions, follow up questions, and non-leading questions. Suggest that no more than two interviewers sit in on the interviews. The others can listen to the tape.

A record must be made of all interviews. Important interviews can be transcribed and others simply summarized, so taking notes can save time and effort. Ask that key interviews be transcribed. If you've done a key interview alone, suggest that a board member, such as the flight surgeon, listen to these tapes.

## **Baseline Psychological Test Data**

All pilot candidates after March 1994 have participated in baseline psychological testing to include at least an intelligence test and a neuropsychological screening measure. Most have also taken two personality tests (NEO-PI-R and the Armstrong Laboratory Aviation Personality Survey, ALAPS). If the test data is available, it should be noted in their medical record. If you want the individual's specific information, call the licensed psychologist managing the Enhanced Flight Screening Program at Brooks (DSN 240-3232, Commercial 210-536-3232).

## Crash Site

Visit the crash site if you can. Consider visiting the site with a surviving crew member, the flight surgeon, and perhaps another board member. It may or may not affect your input much, but it will help you see the big picture. When you visit the crash site, don't touch anything. You could destroy fragile evidence or hurt yourself. Hazards include sharp objects, ejection systems, unexploded ordinance, and toxic materials.

## Human Remains

You may have the opportunity to attend the autopsy, view photos of the victims at the crash site and at autopsy, and may listen to the cockpit voice recording prior to and during the mishap. Don't underestimate the emotional impact this material may have on you and others. Consider where these items are stored and viewed. Often boards will keep separate collections of photos with and photos without human remains.

## Data Analysis

Be very careful to distinguish opinions versus facts. After a while it becomes difficult to distinguish what people hypothesize from what they know. Many boards keep a three-column list labeled:

1.) What we know	2.) What we believe	3.) What we need to find out

Don't forget your training in hypothesis testing, data analysis, and interpretation. Your ability to do simple statistics will go a long way. Don't let the board make inferential errors. Boards are often tempted to draw general conclusions from low baserate events. For example, just because somebody else didn't crash, doesn't mean they were flying safely, and just because something is very unlikely, doesn't mean it didn't happen.

## Seeking Consultation

If you reach the limits of your expertise, call someone to ask circumscribed questions. Be sure, however, to clear your questions with the board president or the Safety Center facilitator as they will help you to be discrete and advise you as to what type of confidentiality or privilege statement to read to your consultant. We are naturally inclined to call Armstrong Laboratory scientists; you may have your own network of experts. Ask tailored questions of your experts and tactfully insist they not draw conclusions from the questions you have asked nor discuss your conversation with other parties.

## **Board Dynamics**

The group dynamics of a board can be intense. Members of the board have different agendas and different loyalties, but everyone is under pressure and fatigued. Emotions will run high, particularly if fatalities are involved. Some boards will respond by avoiding conflict while others can't move beyond it. Help the group deal with the conflict, and watch your own response to conflict. You may be dealing with board members who may have little appreciation of human factors; but, this group is very bright. Be diplomatic and extremely patient. You may be most effective if you think of yourself as an educator. (See Appendix F for lighted-hearted tips on talking to pilots)

## **Consultation Report**

You will need to formulate some type of report. Be sure that the flight surgeon member and the board president understand your input. Call the psychologist at the Safety Center or other consultants (see Appendix C) who have done this work before for guidance regarding the content and format of your report. By regulation, however, only Safety Center consultants can legitimately possess samples as all materials pertaining to the SIB must be destroyed within 60 days of the conclusion of the SIB. All findings of the SIB can only be used in AF mishap prevention.

Human factors experts contribute to mishap investigations as consultants to the flight surgeon member of the board. Your report will be included as an attachment to the flight surgeon's report (Tab Y). However, don't rely solely on your written report. Share your ideas with all board members and listen to their input. As a consultant you are not a "voting member," but official non-voting status usually makes little difference. The board president will want your opinion. So remember, you're there to be an expert, not a subordinate. Don't be surprised if you find yourself on the opposite side of an issue. Educate board members and make your best argument. If they're unconvinced, drop it, but include it in your report.

Each page of your report must include this statement (You can include it in your final draft or let the administrative staff handle it.):

FOR OFFICIAL USE ONLY

THIS CONTAINS PRIVILEGED SAFETY INFORMATION. UNAUTHORIZED USE OR DISCLOSURE CAN SUBJECT YOU TO CRIMINAL PROSECUTION, TERMINATION OF EMPLOYMENT, CIVIL LIABILITY, OR OTHER ADVERSE ACTIONS. SEE AFI 91-204, CHAPTER 1 FOR RESTRICTIONS. DESTROY IN ACCORDANCE WITH AFMAN 37-139 WHEN NO LONGER NEEDED FOR MISHAP PREVENTION PURPOSES

## **Other Roles**

As time evolves, you may become a trusted ally of the board president due to your logic, writing abilities, ability to synthesize and sum up complex situations, and talent for putting together a briefing. Remember, however, that your primary connection to the board is via the flight surgeon.

Also, you may be able to use your skills to benefit the group process, but, you're not there to be a therapist or formal facilitator. You'll have the opportunity to observe and influence group process, and perhaps individual board members. Board members are exposed to many stressors: the mishap site, the wreckage, human remains or injured aircrew members, photos, cockpit voice recorders, and perhaps the notion that "a good pilot screwed up." Listen to what they have to say about it.

If you're still around at the end of the process, offer to serve as a mock audience member and critically evaluate the board president's briefing. Ask tough questions so that the president can get some practice. Don't underestimate the value of role play, but do present it as "practice." Remember, aviators respect planning so as to appear "spontaneous."

After investing a huge amount of time and energy into understanding the events that lead to the mishap, you may be curious to see how investigation process ends up. You can be invited to attend the SIB briefing at the convening authority (MAJCOM) headquarters. If you get a chance to go, you may get to feel a sense of closure and the satisfaction of knowing that you have positively impacted flight safety in the United States Air Force.

## **Appendix A**

### **Suggested "Crash Kit"**

- Flight suits or BDU's
- Flight or BDU cap
- Boots
- Gloves
- Jacket (seasons, and sometimes locations, change during the course of board proceedings)
- Casual Clothes (the board often eats out together and you may get a morning or afternoon off)
- Personal Computer (typists, transcriptionists, computers may be available but won't be convenient)
- Notebook, folders, etc. (office supplies may be available, but take what you need to stay organized)
- Class A uniform or, for civilians, a business suit (Only if you will attend SIB briefing at the convening authority)
- Reference materials

## **Appendix B**

### **Additional Reading**

AF Instruction 91-202 (1 Dec 96)  
The US Air Force Mishap Prevention Program

AF Instruction 91-204 (1 Dec 96)  
Safety Investigations And Reports

AF Pamphlet 91-211 (Not Yet Published)  
USAF Guide To Safety Investigation

AF Instruction 91-213 (Nov 96)  
Operational Risk Management (ORM) Program

AF Pamphlet 91-214 (Not Yet Published)  
Operational Risk Management

AF Pamphlet 127-1 Vol. I (No longer in print)  
US Air Force Guide to Mishap Investigation

AF Pamphlet 127-1 Vol. III (No longer in print)  
Safety Investigation Workbook

Green, R. G., Muir, H., James, M., Gradwell, D. & Green, R. L. (1991). *Human Factors for Pilots*. Brookfield, VT: Ashgate.

Hawkins, F. H. (1987). *Human Factors in Flight* (2nd ed.). Brookfield, VT: Ashgate.

Jensen, R. S. (1995). *Pilot Judgment and Crew Resource Management*. Brookfield, VT: Ashgate.

Trollip, S. R., & Jensen, R. S. (1991). *Human Factors for General Aviation*. Englewood, CO: Jeppesen Sanderson.

Reason, J. (1990). *Human Error*. Cambridge: Cambridge University Press.

Society of USAF Flight Surgeons. (1994). *Aircraft Mishap Investigators Handbook*. Brooks AFB, TX: Author.

Society of USAF Flight Surgeons. (1995). *Flight Surgeon's Checklist* (5th ed.). Brooks AFB, TX: Author.

Stokes, A., Kite, K. (1994). *Flight Stress: Stress, Fatigue and Performance in Aviation*. Brookfield, VT: Ashgate.

**Appendix C**  
**Telephone Numbers**  
(Current as of April 1997)

**USAF Safety Center, Kirtland AFB NM**  
**Life Sciences Branch**

DSN 246-0830  
[Commercial: (505) 846-0830]

**Armstrong Laboratory**  
**Clinical Sciences Division, Brooks AFB TX**

DSN 240-3537  
[Commercial: (210) 536-3537]

**Fitts Human Engineering Division, Wright Patterson AFB, OH**

DSN 785-7580  
[Commercial: (937) 255-7580]

We suggest that you compile your own current list of consultants below:



## Appendix D

### Questioning the Aircraft Mishap Crew's Colleagues and the Leadership

Introduce yourself to the interviewee. Remember to have them read the safety statement (*I have been advised in accordance with provisions of AFI 91-204 that I am not under oath, and the sole purpose of this investigation is to determine all factors relating to the mishap in order to prevent recurrence. Flight safety reports or extracts are not used to establish guilt, negligence, pecuniary liability, or to provide a basis for disciplinary action.*) and get name, etc. Ask for permission to tape. Ensure awareness of difference between safety board and accident board (see Preface). Be sure to start the tape, announce the person you are interviewing and the date. Close the interview on the tape with a statement that this concludes the interview with the person.

Ask which of the crew members they knew and worked with and how they came to know them so that you will know which and how many of the crew members you will have to inquire about.

An alternative to a structured interview is to start general ("Tell me about...") and then get more and more specific. This strategy requires taking notes, or an exceptionally good memory as there will be many avenues to pursue. Have them use the airplane models you provide but make sure they describe it for the audio tape.

**Note:** These questions are tailored to a multiplace airframe. Modify them, as appropriate, for single seat airframes by changing "crew" to squadron/flight member and wingman.

#### Background Questions

What is your position in the squadron?

What are your crew qualifications?

How long have you been here?

How long have you been in a flying position either here or in another unit?

What was/were your previous assignment(s)?

What was your relationship with (Crew member)?

How well do/did you know (Crew member)?

How long have/did you known (Crew member)?

Have you ever flown with him/her? When? How often? In what position?

On what types of missions?

## **Personality and Interpersonal Style**

How would you describe Crew member?

How would you describe his/her personality?

How would you describe his/her relationships with other members of the squadron?

How assertive was he with other squadron and crew members?

*(For example, did he listen to understand or listen to refute, was he autocratic and argumentative or cooperative and team-oriented, was he arrogant and self-absorbed or was he able to listen to and consider other people's opinions)*

## **Personal Life Events**

What kind of work demands did Crew member talk about?

Flying vs. additional duties?

What kind of family and relationship demands did he talk about?

What were his/her goals for the future in the Air Force and his/her personal life?

What is your PERSTEMPO (pace of life) like? Do you think that's typical?

How are additional duties distributed in your squadron?

What's the leave policy like in this squadron? Formal and real world?

What kind of emphasis is placed on PME and off-duty education?

What does it take to get ahead in this organization?

## **Physiology**

What were his/her fitness habits?

Was he health conscious?

What were his/her smoking and drinking habits?

How would you describe him at squadron parties?

## **Flying skills/Airmanship/Systems Knowledge/Habit Patterns**

How would you describe his/her flying skills? Systems knowledge?

What would you say were his/her greatest strengths as a pilot? As an aircraft commander?

What areas would you have suggested he make adjustments or improvements?

What did he like most about flying?

How would you describe his/her airmanship qualities such as discipline and judgment?

Have you ever experienced an IFE or incident while flying with Crew member?

What happened? How did he and the crew handle it? What was the outcome?

How did your crew approach planning and briefing in missions with Crew member? What type of missions were they? What was the outcome?

Special details such as night, terrain, obstacles?

How did your crew divide responsibilities?

How were responsibilities divided between more experienced vs. less experienced crew members?

What kind of crew member is/was Crew member?

What was his/her style in running the crew?  
(Did he take control or delegate? Did he delegate too much?)

What was the atmosphere like in the cockpit?

What was Crew member's style of cockpit communication?

How did he accept input and provide feedback? How would he identify problems or raise issues?

Would you say that Crew member was a mission-hacker? In what way?

On what occasions have you seen him bend the rules or take short cuts?

What was his/her attitude toward the politics of the squadron and the wing?

What is your attitude toward the politics of the squadron and the wing?

How is this/her squadron/wing different from previous assignments?

## **Squadron Functioning**

What is the squadron's safety policy--formal and real world?

How would you describe the squadron/wing Risk Assessment/Risk Management Program?

What is the general attitude about regulations and standard procedures?

What are the consequences of refusing a mission for the squadron? For an individual?

What are the consequences of raising safety concerns? Have you ever refused a mission?

What happened or would happen if you did?

How do you perceive the pressure to complete a mission?

How would you describe the general level of experience within the squadron/in the wing?

How would you describe the squadron flight planning facilities; adequacy of pubs/written guidance/charts in the squadron and on the aircraft?

How would you describe the squadron/wing training program related to flying duties?

Do you feel adequately prepared and trained for all missions you might be required to perform?

Is that because of training or your own personal experience and initiative?

What is the attitude about CRM?

What is the OPS TEMPO like? How does it affect you and your squadron mates?

How does it compare with past assignments or with a couple of years ago?

## **Preparation and Briefing**

What do you know about the crews' preparation for this particular mission?

What was their attitude about going on this particular mission?

What did he have to say about the other members of the crew?

How would you go about preparing for this mission?

What points of emphasis would be important in planning for the mission?

How would you divide your time?

What pubs/aids would you check, get?

### **Data Gathering in Mishap Squadron**

Timeline of events leading to mishap

Promotion timing

UIFs

Additional Duty Roster

Squadron Tasking Log

Leave history and policy statement

Finance 6-month look TDY for all

30/60/90, total and last night time flight

Accident hx of the Wing

Personal Calendar Copy

Authorized/Assigned Personnel

### **Questions for Leadership**

Is there a wing or squadron responsibility to review and/or approve missions before they are assigned to the crew?

What criteria were used to build this crew?

What competing missions were there?

What was the possibility of requesting a change or refusing the tasking?

Which missions are briefed to whom?

What competing priorities were there at the time this mishap was being planned?

### *Manning, Experience and Training*

What is your sense of the experience level of the wing?

How do you track it? Could you show me the tool(s) you use?

Have you raised any concerns about overall manning or experience levels?

Any documentation of those concerns available?

What's your assessment of quality of your training program?

What would you say are the strengths and opportunities for improvement?

How do you balance safety concerns with the need for mission accomplishment?

What is the status on implementation of Operational Risk Management?

What message do you try to communicate to the squadron?

(For example: Refusal of missions which exceed ability; mentoring of new flyers; personal risk taking/ risk assessment/management)

What are the consequences of refusal of a mission?

What are the consequences of non-compliance with SOPs?

What are the consequences of short cuts?

What is the criteria used to select and build crews?

What is the QC process for composition of crews for designated missions?

What is the QC process for mission planning?

## **Appendix E**

### **Interviewing Tips**

- An interview is not a conversation.

Interviews are purposeful, directive, and non-reciprocal.

use limited self-revelation.

- Build rapport and relationship.

Listen. Restate and ask for clarification. Offer beverages and take breaks as needed.

- Ask open-ended questions.

Encourage spontaneous recall. Start general, then get specific.

- Ask closed-ended questions as appropriate.

Efficient for details, encourages recognition, but may be leading.

- Pay attention to the process as well as the content.

How is this person relating to you? (Note tone of voice, posture, facial expression.)

- Make a judgment about the level of cooperation you're getting.

If they're not answering your questions, change your style.

- Be comfortable with pauses.

Let him think, let him talk.

- Take your time and be complete.

You don't want to have to go back and re-interview.

- Be aware of who the client is.

Explain the uses of the information you are gathering.

Do not promise absolute confidentiality as you cannot guarantee it.

## **Appendix F**

### **How to Talk to Pilots**

(A Light-Hearted Guide)

Adapted from an unpublished article by

Col. (Dr.) Roger F. Landry, USAF, Retired

- \* Aircrew members are not stupid or lacking in adequate attention and concentration. They may appear rude and impulsive but in reality they are quite conforming. It's just that they shun abstractions and get bored easily. Ignore these realities at your peril!
- \* Be brief when you brief. Remember, as a human factors specialist, you represent a threat. The milk of aircrew kindness comes in very small containers and has a quick expiration date. If you are any good, they are likely to afford you only five or 10 minutes. If you are not particularly good, then you will have only a matter of seconds. If you insist on continuing, you will find yourself facing an increasingly hostile mob. An ugly scene may develop. Consider running for your life.
- \* Be funny. Aircrew like to have a good time and don't take themselves too seriously. Don't take yourself too seriously. Remember, seriousness is for shoe clerks. If aircrew members are not laughing or smiling at least once every ten minutes, they must be either grounded or dead (a distinction they don't make).
- \* Prepare so that you appear spontaneous. No, the preceding is not an oxymoron. Aircrew members love spontaneity even if it is contrived. Remember, these people are compulsive planners and leave little to chance.
- \* Know what you're taking about. BS artists are quickly spotted for what they are: TARGETS!
- \* Use aviation metaphors and colloquialisms freely if you know what you are talking about. Engage in malaprops and you may thereafter find yourself ignored. If you don't how, then ask!
- \* Be prepared for some good-natured heckling. They wouldn't do it if they did not like you. The ultimate insult from these people is for them to ignore you. Remember, they're paying attention if they're engaging you.
- \* Watch any "wannabe" tendencies that you may be harboring. Remember, we are not pilots. The healthy motive for working in the aviation environment is to positively impact the flying mission and increase flight safety, not to give you an excuse to wear a flight suit.



## **Appendix G**

### **Aircraft Mishap Investigation and Prevention Course Syllabus**

The United States Air Force (USAF) Aircraft Mishap Investigation and Prevention (AMIP) course is currently the only formal training available in the USAF to clinical psychologists interested in working with aviators. Initiated in April 1993, the two-week course trains psychologists along side aerospace physiologists and flight surgeons. The course pairs didactic instruction with field exercises of mock aircraft mishaps.

#### **Lectures by Psychologists**

Aviation Psychologist's Role  
Psychological Human Factors  
Emotional Factors  
Interviewing Techniques  
Mishap Board Dynamics  
Critical Incident Stress Debriefing  
Finding an Expert Consultant

#### **Breakout Sessions - Psychology**

Intro to Aviation Psychology  
US Army Aeromedical Psychology Course  
Operational Support Flying  
Aviation Post-doc Training  
Publications and Regulations  
Aviation Psychology Research  
Psychologist's Role during Deployment  
Performance Enhancement  
Behavioral Airsickness Management  
Case Studies

#### **Lectures by Flight Surgeons**

Flight Surgeon's Role in Mishap Investigation  
Current Aeromedical Safety Concerns  
Writing Tab Y

#### **Lectures by Physiologists**

Aerospace Physiologist's Role  
Intro to the Safety Investigation Process  
Spatial Disorientation  
Situational Awareness  
Cockpit Resource Management  
Fatigue  
Acceleration and G-LOC  
Command Briefing  
Case Studies  
Field Lab

#### **Lectures from Others**

Engineering Factors  
Crash Dynamics  
Crash Survivability  
Auditory Factors  
Visual Factors  
Legal Issues in Mishap Investigation  
Life Support Officer's Role  
Aerospace Pathology's Role  
Mass Casualty Management  
Mortuary Affairs  
Public Affairs

## **Appendix H**

### **Your Suggestions and Comments**

This guide is intended to be a living document. We want your input. Please send your suggestions and experiences in prevention (presentations, programs), consultation, and near-board experiences. Please write and share your experiences so that we may ALL benefit from them.

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